



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/786,331	02/26/2004	Tsuyoshi Kitahara	Q80114	2651

7590 12/19/2005
SUGHRUE MION, PLLC
2100 Pennsylvania Avenue, NW
Washington, DC 20037-3213

EXAMINER

KIM, PAUL D

ART UNIT	PAPER NUMBER
----------	--------------

3729

DATE MAILED: 12/19/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/786,331

Applicant(s)

KITAHARA, TSUYOSHI

Examiner

Paul D. Kim

Art Unit

3729

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 September 2005.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 15-22, 37-41 and 50-53 is/are pending in the application.
- 4a) Of the above claim(s) 17, 18, 21, 37-41 and 50-53 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 15, 16, 19, 20 and 22 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 February 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☒ Certified copies of the priority documents have been received in Application No. 09/708,514.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>2/26/04</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

This office action is a response to the election of species filed on 9/26/2005.

Response to the Election of Species

1. Applicant's election of Species A, Species AA, claims 15-22, in the reply filed on 9/26/2005 is acknowledged. However, The elected claims for Species AA are claims 15, 16, 19, 20 and 22. The non-elected claim 17 is drawn to Fig. 5B and the non-elected claim 18 is drawn to Fig. 10 and the non-elected claim 21 is drawn to Fig. 7. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).
2. Claims 17, 18 and 21 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 9/26/2005.

Drawings

3. Figures 33 and 34 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct

any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

4. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

The following title is suggested: --A METHOD OF MANUFACTURING AN INK-JET RECORDING HEAD--.

5. The disclosure is objected to because of the following informalities: In "BRIEF DESCRIPTION OF DRAWINGS" there are no descriptions for Fig. 13 (a)-(g), Fig. 15 (a)-(g), Fig. 24 (a)-(e) and Fig. 25 (a) –(f). Appropriate correction is required.

Claim Objections

6. Claim 22 is objected to because of the following informalities: The phrase "the base member" as recited in line 4 is not clear as to which one is the base member recited in claim 15. Appropriate correction is required.

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

8. Claims 15 and 16 are rejected under 35 U.S.C. 102(b) as being anticipated by Takashi et al. (JP 08-187868).

Takashi et al. teach a process of making an ink-jet recording head comprising steps of: a first etching step for etching the plate-shaped member to form the partition wall (3) on the front surface of a plate-shaped member; a second etching step for etching the plate-shaped member to form a land (9) on the back surface of the plate-shaped member; and a nozzle plate attaching step for attaching the nozzle plate (2) directly to the front surface of the plate-shaped member as shown in Fig. 2.

Re. Claim 16: The plate-shaped member includes a first layer (a layer of 3) having the front surface, a second layer having the back surface (a layer of 9) and an intermediate layer (a layer of 21) sandwiched between the first and the second layers as shown in Fig. 2, the first etching step etches a desired portion of the first layer selectively over the intermediate layer so that the first layer is penetrated, and the second etching step etches a desired portion of the second layer selectively over the intermediate layer so that the second layer is penetrated.

9. Claims 15 and 22 are rejected under 35 U.S.C. 102(b) as being anticipated by Morikoshi et al. (US PAT. 5,684,520).

Morikoshi et al. teach a process of making an ink-jet recording head comprising a for forming the plate-shaped member to form the partition wall (a layer between 3 and 6) on the front surface of a plate-shaped member; a step for forming the plate-shaped member to form a land (6c) on the back surface of the plate-shaped member; and a

step for attaching the nozzle plate (1) to the front surface of the plate-shaped member as shown in Fig. 4 (see also col. 3, line 33 to col. 4, lines 34).

As per claim 22 the nozzle, the spacer (3) and the plate-shaped member are bonded together (col. 3, lines 49-55).

Claim Rejections - 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. Claims 19, 20 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takashi et al. in view of Otsuka et al. (US PAT. 6,305,792).

Takashi et al. teach all of the limitations as set forth above except a base member having an auxiliary ink storage chamber communicated with a common ink storage chamber between the plate-shaped member and the nozzle plate (as per claim 19). Otsuka et al. teach a process of making an ink-jet recording head including a base member (101,102,103) having an auxiliary ink storage chamber (30) communicated with a common ink storage chamber (34) between the plate-shaped member (104,105) and the nozzle plate (100) as shown in Fig. 1 (see also col. 1, line 23 to col. 2, line 20) in order to communicate between the auxiliary ink storage chamber and the ink storage chamber for reducing the ink storage chamber to make the ink-jet recording head small.. Therefore, it would have been obvious at the time the invention was made to a

person having ordinary skill in the art to modify a process of fabricating an ink-jet recording head of Takashi et al. by the base member having an auxiliary ink storage chamber as taught by Otsuka et al. in order to communicate between the auxiliary ink storage chamber and the ink storage chamber for reducing the ink storage chamber to make the ink-jet recording head small. Otsuka et al. also teach that the auxiliary ink storage chamber is offset from a position corresponding to the common ink storage chamber and partly overlaps the ink supply passage as shown in Fig. 1 (as per claim 20). Also, Otsuka et al. teach an adhesion between the plate-shaped member and the nozzle plate (as per claim 22). Otsuka et al. teach a process of making an ink-jet recording head including a process of adhering a nozzle plate (1) to an ink chamber plate (2, equivalent with the plate-shaped member) in order to increase bonding strength between the nozzle plate and the ink chamber plate as shown in Fig. 8 (see also col. 8, line 55 to col. 9, line 8). Therefore, it would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify a process of fabricating an ink-jet recording head of Takashi et al. by adhering between the nozzle plate and the ink chamber plate as taught by Otsuka et al. in order to increase bonding strength between the nozzle plate and the ink chamber plate.

12. Claims 19 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Morikoshi et al. in view of Otsuka et al. (US PAT. 6,305,792).

Morikoshi et al. teach all of the limitations as set forth above including a spacer (3, equivalent with a base member) except the base member having an auxiliary ink storage chamber communicated with a common ink storage chamber between the


plate-shaped member and the nozzle plate (as per claim 19). Otsuka et al. teach a process of making an ink-jet recording head including a base member (101,102,103) having an auxiliary ink storage chamber (30) communicated with a common ink storage chamber (34) between the plate-shaped member (104,105) and the nozzle plate (100) as shown in Fig. 1 (see also col. 1, line 23 to col. 2, line 20) in order to communicate between the auxiliary ink storage chamber and the ink storage chamber for reducing the ink storage chamber to make the ink-jet recording head small. Therefore, it would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify a process of fabricating an ink-jet recording head of Morikoshi et al. by the base member having an auxiliary ink storage chamber as taught by Otsuka et al. in order to communicate between the auxiliary ink storage chamber and the ink storage chamber for reducing the ink storage chamber to make the ink-jet recording head small. Otsuka et al. also teach that the auxiliary ink storage chamber is offset from a position corresponding to the common ink storage chamber and partly overlaps the ink supply passage as shown in Fig. 1 (as per claim 20).

Conclusion

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Paul D. Kim whose telephone number is 571-272-4565. The examiner can normally be reached on Monday-Friday between 7:00 AM to 3:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Peter Vo can be reached on 571-272-4690. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Paul D Kim
Examiner
Art Unit 3729